

Claims

Sub B2 } 1. Communication process between an Information Handling System (IHS) and at least one display (21) having On Screen Display (OSD) capability; wherein

- said IHS system includes a processor (11) under control of an operating system, a graphics system (22) and an electronic circuit (12) operating independently of said processor (11) and said graphics system (22),

- said at least one display receives a graphics channel (20) comprising the graphics signals generated by said graphics system (22) and a service channel (19) allowing interaction between said at least one display (21) and said operating system;

the process being characterized in that said service channel (19) is also used to permit said independent electronic circuit (12) to have access to the On Screen Display (OSD) capability of said at least one display (21) in order to display text and/or graphics independently of said processor and said operating system (11).

2. Process according to claim 1 characterized in that said service channel of said display (21) consists of a bi-directional serial communication link which is compatible with the I²C protocol, providing either DDC or DDC/CI communication support with said operating system, as well as an I²C communication link between said independent electronic circuit (12) and said at least one display in order to provide to said electronic circuit (12) a direct access to the OSD capability of said at least one display (21).

3. Process according to claim 2 characterized in that said electronic circuit (12) consists of a hardware monitoring circuit displaying monitoring feedback information to the user via said service channel.

4. Process according to claim 4 characterized in that said graphics system (22) is either an AGP or PCI graphics card which is plugged into a corresponding AGP or

PCI slot having at least two conductors being reserved for said I²C communication link conveying the OSD commands to be directed to said at least one display.

5. Process according to claim 3 characterized in that said hardware monitoring circuit (12) is connected via a network to said IHS system in order to provide an alarm on Local Area Network (LAN) capability.

B2 6. Information Handling System (IHS) comprising:

10 - a processor (11) arranged to operate under the control of an operating system, a graphics system (22) and an electronic circuit (12) operable independently of said processor;

15 - at least one display (21) having On Screen Display (OSD) capability and including first receiving means for receiving a graphics channel (20) upon which graphics signals generated by said graphics system (22) are transmitted, and second receiving means for receiving a service channel (19) for allowing interaction between said at least one display (21) and said operating system;

20 characterized in that said service channel and said display are arranged to permit said independent electronic circuit (12) to access the On Screen Display (OSD) capability of said at least one display (21) in order to display text and/or graphics independently of said processor and said operating system (11).

25 7. Information Handling System according to claim 6 characterized in that said service channel consists of a bi-directional serial communication link.

Sub B3 8. Information handling system as claimed in claim 7 wherein said serial communication link is compatible with the I²C protocol, and provides a DDC or a
30 DDC/CI communication interface with said processor (11) as well as a I²C communication link between said independent electronic circuit (12) and said at least one display in order to provide to said electronic circuit (12) a direct access to the OSD capability of said at least one display (21).

9. Information handling system according to claim 7 ~~or claim 8~~ characterized in that said electronic circuit (12) is a hardware monitoring circuit for displaying monitoring feedback information to the user via said service channel.

10. Information Handling System according to claim 8 characterized in that said graphics systems includes:

- a graphics engine (13) for providing graphics signals to said graphics channel and a first I²C communication channel complying with the DDC/CI protocol for controlling said at least one display (21);

- arbitration means (14) having a first input connected to receive said first I²C communication channel provided by said graphics engine (13), and having a second input for receiving a second I²C communication channel provided by said hardware monitoring circuit (12);

- said arbitration means providing arbitration between said first and said second I²C communication links so that the hardware monitoring circuit (12) and the processor (11) can both get access to said second receiving means of said at least one display (21).

11. Information Handling System according to claim 10 characterized in that said graphics systems is an AGP or PCI graphics card (22) which is plugged into a corresponding AGP or PCI graphics slot having at least two wires which are dedicated for the communication of said second I²C protocol communication channel.

12. Information Handling System according to claim 11 characterized in that said graphics system and said processor are located on the same motherboard.

13. **Graphics system for use in an** Information Handling System (IHS) as defined in any of claims ~~6 to 10~~ ^{Claim 6} characterized by:

- a graphics engine (13) for providing graphics signals to said graphics channel and a first I²C communication channel complying with the DDC/CI protocol for controlling said at least one display (21);

B6⁵ - arbitration means (14) having a first input connected to receive said first I²C communication channel provided by said graphics engine (13), and having a second input receiving a second I²C communication channel provided by said hardware monitoring circuit (12);

10 - said arbitration means for providing arbitration between said first and said second I²C communication channels so that both hardware monitoring circuit (12) and said processor (11) can get access to said second receiving means of said at least one display (21) without contention.

15 14. Graphics system according to claim 13 characterized in that said arbitration means are arranged to prevent the access of said service channel to one among said first and second I²C communication links until a preceding I²C transaction has been successfully completed.

Sub B7 15. Display (21) device having On Screen Display (OSD) capability for use in an Information Handling System (IHS) including a processor (11) under control of an operating system, a graphics system (22) and an electronic circuit (12) operating independently of said processor (11) and said graphics system (22),

25 - said display having one or more connectors for receiving a graphics channel (20) comprising graphics signals generated by said graphics system (22) and a service channel (19) allowing interaction between said display (21) and said operating system;

30 characterized by means responsive to commands in said service channel for controlling the On Screen Display capability independently of the operation of the processor (11) and the operating system.

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16. Display device according to claim 15 characterized in that said service channel consists of a bi-directional serial communication link which is compatible with the I²C protocol, and providing either DDC or DDC/CI communication with said operating system, as well as an I²C communication link between said independent electronic circuit (12) and said display in order to provide to said electronic circuit (12) a direct access to the OSD capability of said display (21).

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